EXHIBIT A

DRAFT

CLEANUP ACTION PLAN

Roderick Timber Site

Aberdeen, WA

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1.0 INTRODUCTION

This draft Cleanup Action Plan (CAP) outlines the cleanup proposed for the Roderick Timber site currently listed on the Washington State Department of Ecology's (Ecology's) Hazardous Sites List under the Model Toxics Control Act (MTCA), Revised Code of Washington (RCW) 80.105D and Washington Administrative Code (WAC) 173-340. This CAP is for the eastern portion of the property formerly owned by the Roderick Timber Company in Aberdeen, Washington. **Figure 1** is a vicinity map that shows the site and the surrounding area. The CAP was prepared in accordance with the Consent Decree. The Grays Harbor Historical Seaport Authority (GHHSA) owns the Roderick Timber site.

This document presents the following information specified by MTCA to be included in a CAP:

- A description of the site and site subsurface conditions (Section 1.0)
- Cleanup levels and points of compliance (Section 2.0)
- Alternatives evaluated (Section 3.0)
- The proposed cleanup action (Section 4.0)
- A summary of the justification for selecting the proposed cleanup action (Section 5.0)
- State and federal laws applicable to the proposed cleanup action (Section 6.0)
- A description of compliance monitoring (Section 7.0)
- An implementation schedule and an estimate of the restoration time frame (Section 8.0)
- A list of references (Section 9.0)

1.1 Site Description and History

The Roderick Timber site is approximately 214 acres in size. The site and its vicinity are in a floodplain surrounded by the Chehalis River to the west and south and a slough to the north and east. The site was developed through the filling of historical wetlands (around seven-foot elevation) that experienced wet season flooding. Fill material used to develop the site includes dredge spoils and wood waste. Refuse was placed in the southeastern portion of the site. Most of the site is currently unused and contains upland and wetland vegetation. During the remedial investigation process, much of the site was found to be free of significant contamination. Some filled areas of the site have reverted back to a wetlands ecosystem.

Known filling events include placement of Chehalis River dredge spoils by the U.S. Army Corps of Engineers (Corps) in the mid- to late 1950s. Several sources indicate that a solid waste (garbage) landfill was operated at the site between approximately 1958 and 1968. In the mid-1970s, Phillip E. Roderick purchased the site and adjacent properties. Roderick used the northern portion of the site as a truck maintenance facility and a log-processing yard. Maintenance yard activities included fueling from underground storage tanks (USTs), vehicle maintenance and truck and equipment steam cleaning. Roderick continued to use the southern portion of the site for placement of dredge spoils and wood waste. The Roderick Timber Company went bankrupt in 1987 and ceased operations. Ten years later, GHHSA purchased the site. GHHSA uses the fenced area in the former maintenance yard for its youth shipbuilding and woodworking programs.

For the purposes of this CAP, the site boundaries are Hagara Street to the west, Junction City residences to the north and west, Elliot Slough to the north, wetlands to the east and south and undeveloped property to the south. The wetlands owned by the Grays Harbor Audubon Society to the south are not included as part of the site since no appreciable contamination has been discovered south of the GHHSA property. On site, the Maintenance Area refers primarily to the northwestern portion of the site that is fenced and includes some areas immediately outside of the fence. The Landfill Area refers primarily to the southwestern portion of the site that is higher in elevation due to past filling activities and heavily vegetated. In some areas, the Landfill Area has reverted to wetlands.

In the late 1980s, three remedial actions were conducted at the site in the Maintenance Area. In 1988, Ecology completed a remedial action that included the removal and off-site disposal of the following:

- Soils contaminated by a solvent spill
- Improperly stored hazardous substances
- A waste oil UST
- Soils in the immediate vicinity of the waste oil UST
- Sludge in the oil pit in a site building
- Liquids in the site USTs

In 1988, PTI Environmental Services removed and disposed off site approximately 370 cubic yards of soil from the area where trucks had been parked. In 1998, Ecology completed another remedial action by excavating (and disposing off site) soils north of the pumphouse in the vicinity of the USTs suspected to have diesel contamination.

1.2 Project History

Ecology and the City of Aberdeen have already conducted certain remedial actions under MTCA, which are an integral part of the preferred cleanup alternative for this site. With grant funding from US EPA, the City conducted a remedial investigation and feasibility study (RI/FS), among other things, to investigate the nature and extent of contamination at the site, to develop a range of alternatives for cleanup and to meet community involvement requirements. In addition, in 2003, Ecology removed three USTs from the site and cleaned and filled the remaining three USTs at the site. Ecology also excavated approximately 1,524 tons of soil from the UST excavation and former fuel dispensing area. Ecology began in situ bioremediation of residual petroleum hydrocarbon contamination from the fueling activities. Other control measures that have occurred at the site include the placement of approximately two to four inches of gravel over the soils in the Maintenance Area.

1.3 Subsurface Conditions

As described in more detail in the draft RI/FS (EI, 2002), two primary stratigraphic layers exist at the site, referred to as the Lower and Fill Horizons. The Fill Horizon, as its name implies, was

formed as a result of placement of fill. Water level data suggest that the Fill and the Lower Horizons generally behave as one heterogeneous unconfined aquifer, and that there is a generally consistent radial groundwater flow pattern beneath the site, primarily toward the Chehalis River. Data also suggest the Lower Horizon likely represents a significant barrier to the downward migration of potential contaminants through the Lower Horizon into the deeper subsurface.

The contamination at the site is localized in the two areas affected by historical activities: 1) the landfill and 2) the truck maintenance area. Contaminants at the site were compared against MTCA criteria (Methods A and B) as benchmarks to screen the data for potential risk to human health and the environment and to develop possible remedial actions. The environmental impacts in the area of landfilling appear to be elevated concentrations of some metals, arsenic and chromium, in groundwater. However, the refuse landfill is only one of a number of possible sources of these metals. Other possible sources include the following:

- The site (prior to development) was originally brackish wetlands which have served for millennia as a natural filtering mechanism for water draining the Chehalis River Basin
- Some of the fill material are Chehalis River dredge spoils
- Many of the former petroleum hydrocarbon concentrations exceeding MTCA criteria were found to have a biogenic source (such as decomposing wood)

Metals results that are exceedances of MTCA criteria are sporadic and discontinuous, not indicating a migrating plume of contamination.

Impacts from the truck maintenance area primarily appear to be elevated concentrations of total petroleum hydrocarbons (TPH) and carcinogenic polycyclic aromatic hydrocarbons (cPAHs) in soil. Contaminants generally migrate in the direction of groundwater flow; however, site groundwater flow velocity is low due to the predominance of interspersed wetland and native fine-grained sediments of low permeability.

2.0 CLEANUP LEVELS AND POINTS OF COMPLIANCE

Because few contaminants exist at the site, the simplified MTCA Method A residential criteria are selected as site cleanup levels. MTCA Method A criteria are at concentrations at least as stringent as those specified in other applicable state and federal regulations and are protective of human health and the environment. Selecting Method A criteria as cleanup levels for the site is a conservative approach, and appropriate due to the site's proximity to residences. The points of compliance are GHHSA's property boundary for the north and west, and the landfill boundary for the northeast, east and south.

Analyte	Cleanup Levels	
	For Water (ug/L)	For Soil and Sediment (mg/kg)
Arsenic[1]	5	2
Chromium III[1,2]	100	2000
Hexavalent Chromium[1]	50	19
PAHs	0.1	0.1
TPH[3] (gasoline range)	1000	100
TPH[4] (diesel range)	500	2000
TPH[4] (heavy oil range)	500	2000

[1]Due to silty water samples observed during RI sampling, these cleanup levels apply to samples that have been filtered.
[2]Chromium III standards apply if hexavalent chromium is not detected.
[3]RI sampling results indicate benzene is not present at this site so these cleanup levels are applicable.
[4]Due to biogenic interference detected during RI sampling at this site, these cleanup levels apply to samples that have undergone silica gel cleanup.

3.0 SUMMARY OF CLEANUP ALTERNATIVES CONSIDERED

The City conducted a RI/FS and community outreach with grant funding from US EPA and Department of Ecology "Clean Sites" funding administered through an Interagency Agreement. These activities are remedial activities under MTCA and are integral to all cleanup alternatives for the site, including the preferred remedial alternatives. This section summarizes the portion of this work analyzing the feasibility of various cleanup alternatives.

As described in detail in the draft RI/FS (EI, 2002), to determine cleanup action alternatives, remedial technologies/approaches were identified that could address metals in groundwater and petroleum hydrocarbons (and cPAHs) in soil and water. These technologies/approaches were identified because they could reduce the risks to human health and the environment further and reduce the time frame for site restoration. Because of the two parts of the site, several remedial technologies and approaches are necessary as components of the cleanup action.

In the feasibility study, eight appropriate treatment technologies and approaches were developed into seven alternatives for the Landfill Area and thirteen alternatives for the Maintenance Area. The alternatives include provisions for monitoring and institutional controls, as necessary. The alternatives were prioritized based on protectiveness of human health and the environment, permanence, cost, long-term effectiveness, short-term risks, technical and administrative implementability, and consideration of public concern.

Alternatives to Address the Landfill Area. Four identified technologies and approaches were retained as appropriate components to address contamination in groundwater for the Landfill

Area and were developed into seven alternatives. Four of these alternatives use natural attenuation as a component for remediation and three use phytoremediation.

Alternative #1 – Natural Attenuation/Institutional Controls
Alternative #2 – Natural Attenuation/Total Garbage Excavation/Off-Site Disposal
Alternative #3 – Natural Attenuation/Surface Garbage Excavation/Off-Site Disposal
Alternative #4 – Natural Attenuation/Capping
Alternative #5 – Phytoremediation/Institutional Controls
Alternative #6 – Phytoremediation/Surface Garbage Excavation
Alternative #7 – Phytoremediation/Capping

These alternatives evaluate the feasibility to remove the garbage, which was last disposed at the site over 30 years ago. The arsenic, chromium and petroleum hydrocarbon concentrations in groundwater were sporadic and not indicative of a plume in the Landfill Area. Risk to human health and the environment was minimal to non-existent for the Landfill Area since no one is drinking this water and the water has exhibited no negative effects on the surrounding wetland areas as observed by an Ecology wetland specialist and a Washington Department of Wildlife fisheries biologist. It is thought that extensive garbage excavation would cause disruption to the wetlands area for no added reduction of risk. Dredge spoils have been placed over the wetlands on the site at different times, the most recent in the early 1980s. The site is somewhat capped with a vegetative cover that has grown in the last two decades, and some areas of the landfill have reverted back to wetlands. As a result, the preferred alternative is Alternative #5 – Phytoremediation/Institutional Controls, which is further described in the subsequent section. Capping of the limited areas of surficial garbage has been added to Alternative #5 as described in the RI/FS Report.

Alternatives to Address the Maintenance Area. Six identified technologies and approaches were retained as appropriate for the petroleum hydrocarbon contamination in soil and groundwater for the Maintenance Area. These were developed into thirteen alternatives. Site USTs needed to be properly closed and this closure was included in each developed alternative to ensure that the alternatives comply with applicable or relevant and appropriate requirements (ARARs). As indicated on page 9, these tanks have been closed. Previous subsurface TPH contamination concentrations are suspected to have resulted from several possible sources: wood waste, leaking USTs, truck parking and equipment washing. As a result, two areas were identified as potential hotspots (an area north of the USTs and pumphouse) and the area where trucks were parked. The last activity, equipment washing, is suspected to have also impacted the swale along the northern boundary of the site that leads into a ditch system in the residential neighborhood. The alternatives were developed to address these areas of concern. Monitoring wells along the northern boundary of the site have no concentrations that exceed MTCA criteria. Because the contamination in the Maintenance Area is complex, the six technologies and approaches are used in various combinations. The alternatives are as follows:

Alternative #1 – Natural Attenuation/Institutional Controls
Alternative #2 – Excavation/Off-Site Treatment of Three Areas/Natural Attenuation
Alternative #3 – Enhanced In Situ Bioremediation/Swale Sediment Excavation
Alternative #4 – Capping with Soil/Natural Attenuation/Bioremediation of One Area

Alternative #5 – Capping with Asphalt/Natural Attenuation/Bioremediation of One Area

Alternative #6 – Capping with Soil/Bioremediation

Alternative #7 – Impermeable Groundwater Barrier/Natural Attenuation/Institutional Controls

Alternative #8 – Impermeable Groundwater Barrier/Capping with Soil/Bioremediation of One Area

Alternative #9 – Impermeable Groundwater Barrier/Bioremediation/Swale Sediment Excavation

Alternative #10 – Impermeable Groundwater Barrier/Capping with Soil/Bioremediation of One Area/Swale Sediment Excavation

Alternative #11 – Phytoremediation/Bioremediation/Swale Sediment Excavation

Alternative #12 – Phytoremediation/Capping with Soil

Alternative #13 – Impermeable Groundwater Barrier/Bioremediation/Swale Sediment Excavation/Capping with Gravel/Biofiltration Swale

These alternatives use various technologies and approaches to address the various potential areas of concern in the Maintenance Area. These alternatives were evaluated as described in the MTCA regulations. Under Ecology's direction, Alternative #13 was selected as the basis for the cleanup action. Observations of site conditions during the Interim Action work, however, indicate that construction of a barrier to groundwater flow from the site to Junction City is technically infeasible. Therefore, a modified preferred alternative is proposed for the site and is detailed below in Section 4.0.

4.0 PROPOSED CLEANUP ACTION

As noted above, the RI/FS and community outreach activities conducted by the City of Aberdeen with funding from US EPA are an integral part of all alternatives including the proposed remedial action. As such, these activities are MTCA remedial actions and are incorporated in the selected cleanup alternatives for the site.

Selection of the cleanup action alternatives for the Landfill Area and the Maintenance Area was completed according to the requirements set forth in MTCA. The alternatives have undergone review and determination by Ecology that they will comply with WAC 173-340-360 (Selection of Cleanup Actions).

4.1 Landfill Area

Based on the alternative selected in the FS and existing site conditions, Ecology has selected the following preferred alternative for the Landfill Area. The alternative has these elements:

- Soil cap for areas with surficial garbage
- Installation of vegetation where needed on the soil cap and in the Landfill Area to sequester or uptake metals and other contaminants
- Deed restrictions to prevent activities in the area, which could foster a release of toxics from the area
- Monitoring to ensure that a release of toxics does not occur

Selection of this alternative allows for minimal disturbance of wetland areas while protecting human health and the environment. **Figure 2** provides a visual representation of the site and the proposed cleanup action activities for the Landfill Area.

Soil Cap for Areas with Surficial Garbage. This preferred alternative provides soil capping for exposed municipal waste. The soil cap prevents direct contact with the surficial garbage. The proposed cap is a layer of cover material that serves to isolate the area of contamination below the surface. For this site, a cap of soil will be employed to cover all areas in which garbage exists near the surface. Areas of surficial garbage requiring capping (see **Figure 2**) were refined based on field reconnaissance conducted during the Interim Action work. As the surficial garbage is discontinuous and in wetland areas, a protective cap that provides the least disturbance of the wetlands will be provided. Vegetation selected to be complementary to the surrounding wetlands will be planted on the protective cap(s). The cap will provide an additional barrier to contact with toxic compounds that may exist in the buried garbage.

The primary purposes of capping are to prevent humans and animals from coming into contact with the garbage and to reduce the percolation of precipitation through the surficial garbage. Preventing direct contact with degrading garbage increases the protection of human health and the environment.

Installation/Use of Vegetation. Vegetation will be installed, as appropriate, on the soil cap and in the Landfill Area. On the soil cap, vegetation will be selected so that it is complementary to the surrounding wetlands and so that it can provide a barrier to contact with contaminants. Some wetland species found in the Landfill Area are those used for phytoremediation. Vegetation in the Landfill Area appears to have minimized the potentially toxic impacts to the surrounding wetlands. New vegetation will be selected that can grow in the conditions found at the site and can uptake metals and other contaminants. The use of vegetation, or phytoremediation, will minimize the migration of contaminants, to the extent migration exists, where residents, site users or wildlife can contact such contaminants.

Deed Restrictions. Deed restrictions will be instituted for the Landfill Area and will consist of restricting the use of groundwater, disturbances to the protective cap and vegetation, and disturbance to the site that could result in a release of toxic material. These restrictions will be imposed on any entity that attempts to purchase and/or develop the site so that the cleanup actions undertaken as part of this plan will remain viable and will not be undermined by improper development. The restriction of use of groundwater and disturbance of soil will ensure that contamination is not brought to the surface and will thereby prevent exposures to hazardous substances.

Monitoring. Groundwater and surface water monitoring will be conducted for two years to verify that the cleanup action is effective. The monitoring program will likely use select site wells and may require the installation of new wells. Monitoring will occur immediately following construction. Following the completion of performance monitoring (four semi-annual events), additional compliance monitoring will occur for a period and frequency as determinated in the compliance plan (see Scope of Work Task 1 (p)) as adjusted, if necessary, by Ecology.

4.2 Maintenance Area

Based on the alternative selected in the FS and site conditions, Ecology has selected the following preferred alternative for the Maintenance Area. The alternative has these elements:

- UST closure (completed as an interim action in 2003)
- Enhanced bioremediation of soils and groundwater via application of an oxygen releasing compound (completed as an interim action in 2003)
- Excavation and proper disposal of contaminated swale and ditch surface sediments/soils, with backfill and regrading as needed
- Capping portions of the fenced area with a permeable, crushed rock cover
- Installation of a groundwater interception trench that effectuates a barrier to shallow groundwater that could otherwise reach the ground surface and flow across the northern property boundary to Junction City. The system will be located along the northern property boundary
- Construction of a surface swale overlying the groundwater interception trench
- Construction of a wetlands bioswale at the downstream end of the interception trench and surface swale system
- Installation of fencing to restrict access to the groundwater interception system and biofiltration swale
- Deed restrictions to ensure that the viability of remedial actions is maintained
- Water monitoring to ensure that a release of toxics does not occur

Selection of this alternative allows for continued use of this area for light industrial and educational purposes, encouraging the permanent transformation of contaminants to nontoxic compounds while protecting human health and the environment. Selection of this alternative is also based on observations of site conditions during the Interim Action work that indicate construction of a barrier to groundwater flow from the site to Junction City, as specified in Alternative #13, is technically infeasible. **Figure 3** shows the cleanup options proposed for the Maintenance Area.

INTERIM ACTION WORK

Some remedial actions in the preferred alternative were completed prior to the Consent Decree and finalization of the CAP. The following two remedial actions were completed as interim actions, as they were considered to be necessary by Ecology.

UST Closure. USTs in this area were reported emptied and cleaned in 1989. These USTs were no longer in use and were decommissioned as part of the interim action. Three USTs were removed, which is the most effective means of protecting human health, particularly because youth currently use this portion of the site. Three USTs, which were situated beneath the pumphouse (shed), were cleaned out and filled with an inert compound. Removal of these USTs was not feasible due to their location under the shed. In addition, during the removal of UST piping, petroleum hydrocarbon-contaminated soils were encountered in the former fuel dispensing area. As a result, approximately 1,524 tons of soil were excavated and disposed off site.

Application of Oxygen Release Compound. The application of an oxygen release compound is an example of enhanced in situ bioremediation. This process helps speed up natural biodegradation processes that transform contaminants into non-toxic compounds. Increasing the amount of dissolved oxygen stimulates aerobic biodegradation, which effectively degrades gasoline- and diesel-range organics, volatile organic compounds (VOCs), such as solvents or degreasers, and some semi-volatile organic compounds (SVOCs), such as tars and phenols. Dissolved oxygen was boosted by adding oxygen release compound into open excavations during UST decommissioning and by injecting the compound in boreholes in the Maintenance Area.

PROPOSED FINAL CLEANUP ACTION WORK

The remaining remedial actions in the preferred alternative will be completed following the finalization of the Consent Decree and CAP, as follows:

Excavation and Backfilling of the Contaminated Swale and Ditch. The swale and ditch to the north of the Maintenance Area will be excavated and backfilled with clean soil. Attached hereto is a map designating the area of proposed excavation (see **Figure 3**). The excavated soil will be disposed of at a properly licensed off-site facility. If possible, the soil will be treated for reuse off site. Placed clean fill will be regraded to match the pre-excavation landscape, unless otherwise specified. Excavation and filling with clean soil will prevent possible contact by residents, site users or wildlife with contaminants that may have settled in the swale and ditch. Removal ensures that surficial soil contaminants cannot be stirred up at some future time and be the cause of exposure to hazardous materials. Removal of contaminated soil in the off-site ditch will occur once access agreements have been obtained to facilitate this work.

Capping the Fenced Area. The Maintenance Area will be capped with a permeable, crushed rock cover. This cover will prevent direct contact by site users or wildlife with the sporadic contamination found in the sub-surficial soil. Since GHHSA took ownership, many areas of the

Maintenance Area have already been capped with crushed rock. Remaining uncapped areas will receive crushed rock to ensure that the fenced area is adequately capped.

Installation of a Groundwater Interception and Surface Swale System. A groundwater interception system consists of a vertical zone of permeable fill material that intercepts the flow of groundwater and the migration of dissolved contaminants. A groundwater interception trench

with crushed rock will be installed on site along the north property boundary. **Figure 4** shows a conceptual cross section of the interception system. The interception trench will effectuate a barrier to shallow groundwater that could otherwise reach the ground surface and flow across the northern property boundary to Junction City. The system will redirect this water eastward to a surface water bioswale, and thence to a tributary of Elliot Slough.

Along the alignment, the top of the groundwater interception trench will be constructed as a swale that will receive surface water runoff from the south. This runoff is expected to be low in volume given the small contributing catchment area, and will percolate to the underlying interception trench and be conveyed through the system as described above.

Surface water runoff from north of the property boundary will be conveyed eastward via a separate surface swale that runs parallel to and north of the interception trench (see **Figure 4**). A berm will be constructed between the interception trench and this swale such that on-site contribution of flow and possible contaminants to this swale is expected to be negligible. Depending on the location, water entering this swale will be conveyed to either an existing culvert and thence through an existing swale to the Stanley Street Ditch, or through a culvert on the downstream end of the alignment and thence to the Elliot Slough tributary ditch (see **Figure 3**).

Construction of a Biofiltration Swale. A biofiltration swale (bioswale) will be constructed at the downstream end of the groundwater interception system. **Figure 3** shows the location of the bioswale, and **Figure 5** shows a cross section. The bioswale will collect water flowing from the groundwater interception and surface swale system. It will be designed to enhance treatment of this water as it collects in the swale before eventually discharging to the tributary of Elliot Slough. The bioswale will treat this water by way of phytoremediation of organics and metals that may exist, settling out of entrained particles and microbial degradation of organic constituents.

Deed Restrictions. Deed restrictions will be instituted for the Maintenance Area and will consist of: restricting the use of groundwater; restricting extensive disturbances to the subsurface; and site controls. These restrictions will be imposed on the current and future site owners so that the cleanup actions undertaken as part of this plan will remain viable and will not be undermined by improper development. The restriction of use of groundwater and disturbance of soil will ensure that contamination is not brought to the surface and thereby prevent exposures to hazardous substances.

Monitoring. Groundwater and surface water monitoring will be conducted for two years to establish that site groundwater conditions are stable, and to ascertain that no treatment of the biofiltration swale effluent is needed. The monitoring program will use select site wells and may require the installation of new wells. Monitoring will occur immediately following construction. Following the completion of performance monitoring (four semi-annual events), additional compliance monitoring will occur for a period and frequency as determined in the compliance plan (see Scope of Work Task 1 (p)) as adjusted, if necessary, by Ecology.

5.0 RATIONALE FOR SELECTION

MTCA provides a list of requirements for all cleanup actions. These requirements include threshold and other requirements. The threshold requirements state that the cleanup action will protect human health and the environment, comply with cleanup standards, comply with applicable state and federal laws and include compliance monitoring. The other requirements listed in MTCA state that the cleanup action will use permanent solutions to the maximum extent practicable, provide for a reasonable restoration time frame and consider public concerns. The justification of the proposed cleanup actions is provided in the following section.

Protection of Human Health and the Environment. The proposed cleanup action alternatives for the Landfill and Maintenance Areas protect human health and the environment by eliminating the possibility of receptors coming into contact with contaminants. The proposed alternatives also provide for the removal of contaminated substances from areas where the public may come into contact with them. These features of the plans include the following specific examples. Cover materials are to be placed over surficial garbage areas and the Maintenance Area to reduce the possibility of humans or wildlife coming into contact with hazardous materials. Contaminated swale and ditch soils and sediments are to be removed. A groundwater interception system to be installed along the northern property boundary is protective of Junction City residents by minimizing the likelihood that site groundwater will reach the ground surface and migrate to Junction City. A fenced bioswale will be installed at the site to reduce the possibility of hazardous substance contact even further. USTs have been decommissioned in the Maintenance Area. Deed restrictions are to be put in place to ensure that the viability of remedial activities is maintained. Finally, monitoring will be conducted to ensure that cleanup actions are having the desired effect of protecting human health and the surrounding environment.

Compliance with Cleanup Standards. The proposed cleanup actions were chosen to comply with all applicable cleanup standards. The specific cleanup standards for the site are listed in Section 2.0 of this CAP.

Compliance with Applicable State and Federal Laws. Besides MTCA, other laws and regulations were surveyed to determine their applicability. The site cleanup will be in compliance with all applicable or relevant and appropriate requirements, as discussed in Section 6.0 of this CAP.

Compliance Monitoring. MTCA specifies three types of compliance monitoring. These are described further in Section 7.0 of this CAP.

Use of Permanent Solutions to the Maximum Extent Practicable. Permanent solutions that will be applied at the site include the excavation of surficial soils in the swale, proper UST closure, the use of bioremediation to transform hazardous substances to less toxic compounds and the use of phytoremediation to also transform hazardous substances to less toxic compounds, in the forms of vegetative barriers and a bioswale. Limited sources of residual contamination will be managed effectively through implementation of capping with a permeable gravel cap in the Maintenance Area, capping of surficial garbage in the Landfill Area, the installation of a

groundwater interception system, natural attenuation, monitoring, institutional controls and off-site improvements.

Provision for a Reasonable Restoration Time Frame. This cleanup action results in a significant reduction of pathways of exposure to human health and the environment. As few contaminants were identified that exceeded MTCA criteria and no groundwater plume was indicated, the cleanup action will provide for a reasonable restoration time frame and is protective of human health.

Consideration of Public Concerns. Throughout the investigation of this site, the concerns of the community have been considered. There have been various ways for the community to provide input and voice their concerns throughout the project including community meetings and public comments on draft reports. Community concerns have helped direct the continuing investigations at the site as well as the cleanup action alternative recommendations. Drafts of the RI/FS at different junctures have been available for public review; in addition, the information found in the drafts was discussed with the community in public meetings held in July 2000, September 2000, December 2000, January 2002 and January 2003.

6.0 COMPLIANCE WITH ARARS

This evaluation criterion is used to determine the degree to which the proposed cleanup action complies with federal and state standards and regulations. The following ARARs apply to the site:

State Laws and Regulations

- Model Toxics Control Act -- Chapter 70.105D RCW
  - Chapter 173-340 WAC
- State Environmental Policy Act -- Chapter 43.21C RCW
  - Chapter 197-11 WAC
- Minimum Standards for Construction and Maintenance of Wells -- Chapter 173-160 WAC
- Underground Storage Tank Regulations – Chapter 173-360 WAC
- Washington Industrial Safety and Health Act (WISHA)

Federal Laws and Regulations

- Occupational Safety and Health Act -- 29 Code of Federal Regulations (CFR) Subpart 1910.120

The proposed cleanup actions achieve all ARARs listed above. Other ARARs such as air quality regulations will be complied with as an integral part of the remedial design and implementation steps.

7.0 COMPLIANCE MONITORING

MTCA specifies three types of compliance monitoring (protection, performance and confirmational) that must occur with any selected cleanup actions. All compliance monitoring will be conducted in accordance with WAC 173-340-410 to demonstrate that human health and the environment are protected.

Protection monitoring will be conducted to confirm that human health and the environment are adequately protected during the installation and operation and maintenance phases of the cleanup action; these will be further addressed in the engineering design report and any site health and safety plans. Protection of the environment during construction may include dust suppression and storm water runoff control. Soils that are suspect or obvious waste materials will be stockpiled with appropriate contact and runoff controls.

Performance monitoring will be implemented to ensure that the cleanup action has attained all appropriate cleanup, remediation or other performance standards. During excavation, suspect soils will be stockpiled and chemically analyzed for the contaminants identified in the RI. Appropriate treatment and/or disposal will be performed on excavated soils in accordance with applicable permits and this CAP. Soil samples from the north swale excavation footprint will be sampled as part of performance monitoring. In addition, groundwater and surface water, including within the bioswale, will be collected and analyzed to ensure that specified cleanup actions are properly functioning and further cleanup actions are not needed. The performance monitoring period is specified for two years following the construction of the cleanup actions.

Confirmational monitoring proves the effectiveness of the cleanup action. For the site, confirmational monitoring will consist of periodic bioswale surface water monitoring and groundwater monitoring from existing groundwater wells.

8.0 SCHEDULE FOR IMPLEMENTATION

The final RI/FS and CAP will be issued following public review of the draft RI/FS and the draft CAP. Remedial Design documents, such as the Engineering Design Report and specifications, will be developed following submission of the final documents. The cleanup action will be completed within a reasonable time frame in accordance with WAC 173-340-360(6).

9.0 REFERENCES

Environment International Ltd. Draft Remedial Investigation/Feasibility Study, Aberdeen Brownfields Investigation Area. Seattle, WA: Environment International Ltd., 2002.

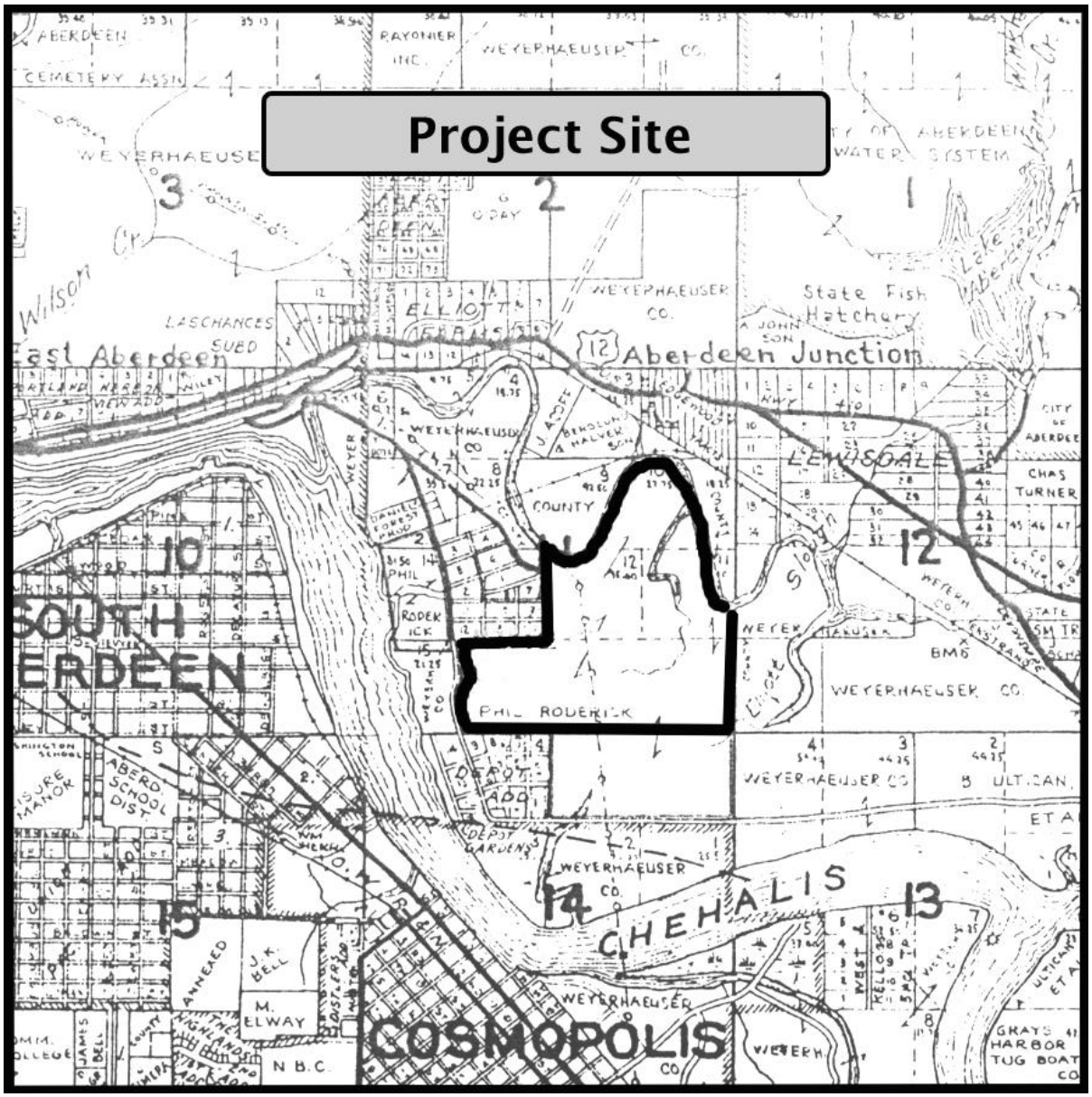

Figure 1. Vicinity Map

Stanley Street

MW-25

5th Street Easement

Swale

NORTH PROPERTY LINE

MW-14

MW-2

MW-16

GW-6

Ditch

alder
willow
dogwood

D

MW-21

Power Lines

Swale

GW-7

MW-3

MW-15

Roadway

GW-2

MW-20

MW-18

GW-4

MW-4

MW-7B

MW-7A

Swale

MW-17

MW-24

PUD Road

reed canarygrass*
sedge*
willow
bulrush*

E

reed canarygrass
sedge*
lady fern*
willow*

F

GW-1A
GW-1

Hagara St.

K

H

MW-10

G

+ willow

I

J

MW-9B
MW-9A

B

PROPERTY LINE

MW-8A
MW-8B

MW-19

reed canarygrass
salmonberry
alder

sedge
patches

C

M

N

L

GW-3A

GW-3

A

SOUTH PROPERTY LINE

Swale

MW-13A
MW-13B

Horse Barn

LEGEND

- Monitoring Well
- Wetland
- 75% Wetland (Mosaic)
- ~70% Upland (Mosaic)
- Assumed Wetland, not fully delineated
- * Not in every area
- Fill
- Fill After Excavation
- Excavate Only
- Concrete

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PHONE 206-525-3362, FAX 206-525-0869

Proposed Landfill Cleanup Action

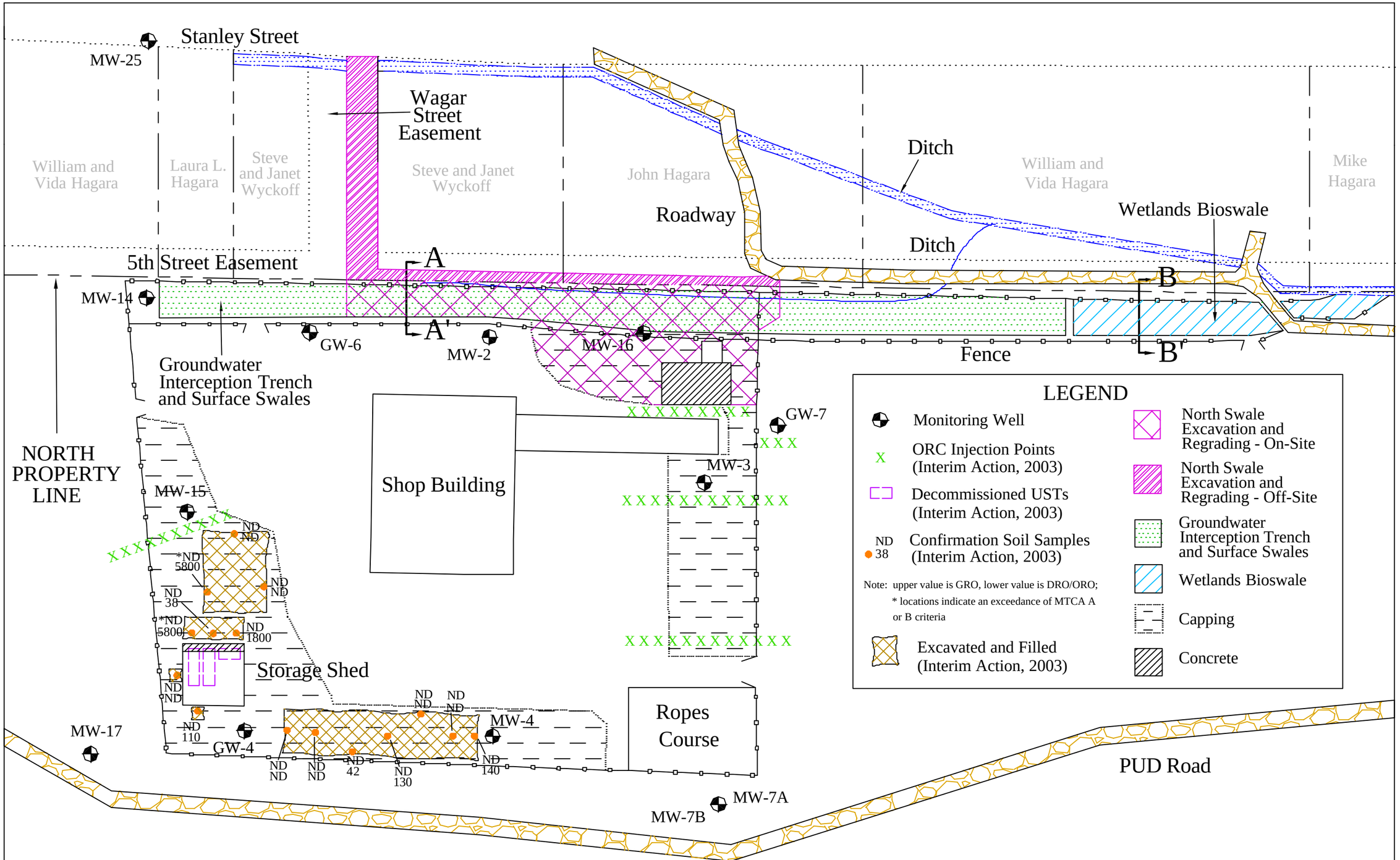
SEAPORT PROPERTY
(FORMER RODERICK TIMBER SITE/SNELL TRACT)

DATE
MAY 2003

FIGURE
2

N

0 100 200 300
Approx Scale in Feet



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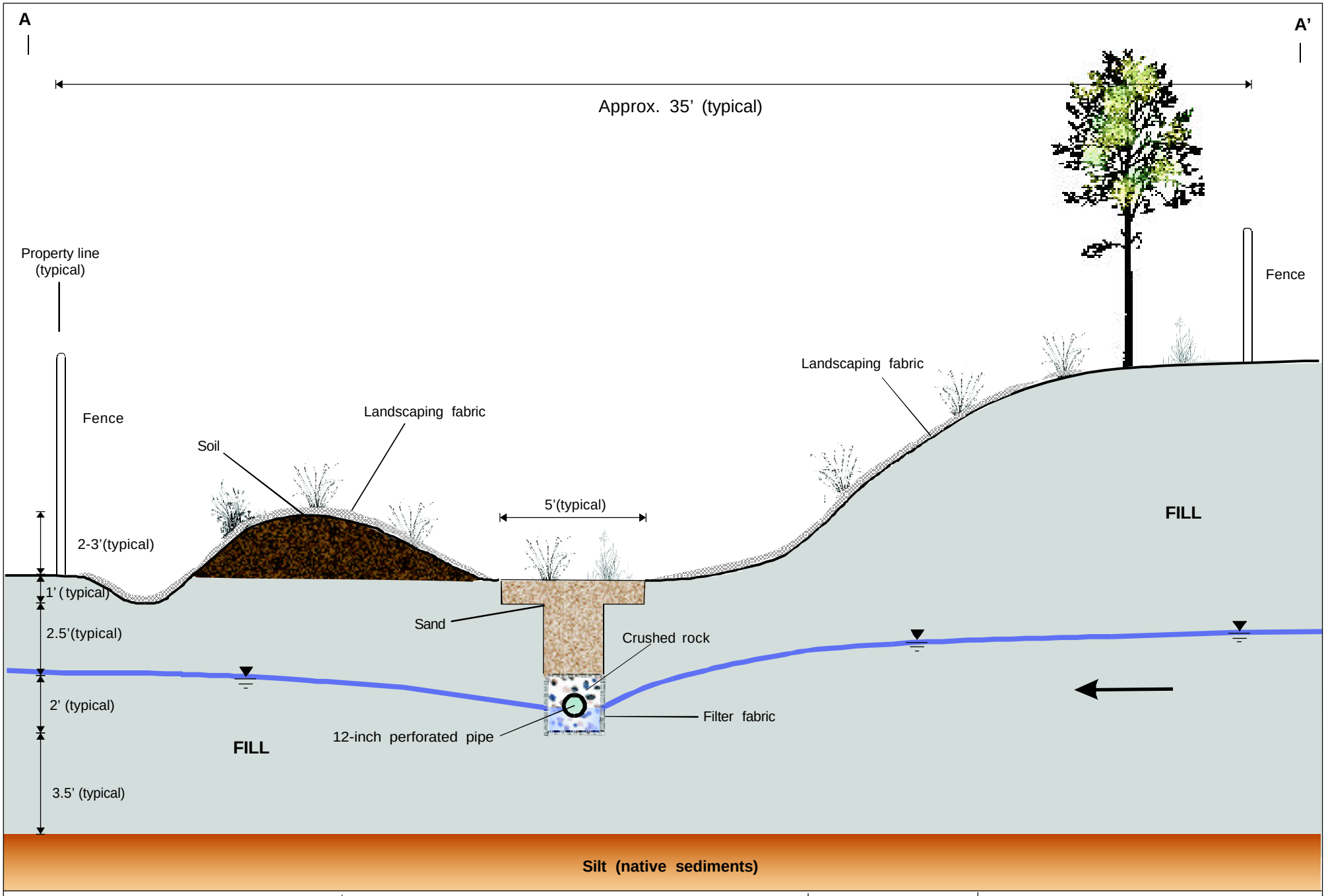
Proposed Maintenance Area Cleanup Action

SEAPORT PROPERTY
(FORMER RODERICK TIMBER SITE/SNELL TRACT)

DATE
MAY 2003

FIGURE
3



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GROUNDWATER INTERCEPTION TRENCH AND SURFACE SWALES CONCEPTUAL DESIGN (SECTION A - A')

RODERICK TIMBER SITE
ABERDEEN, WA

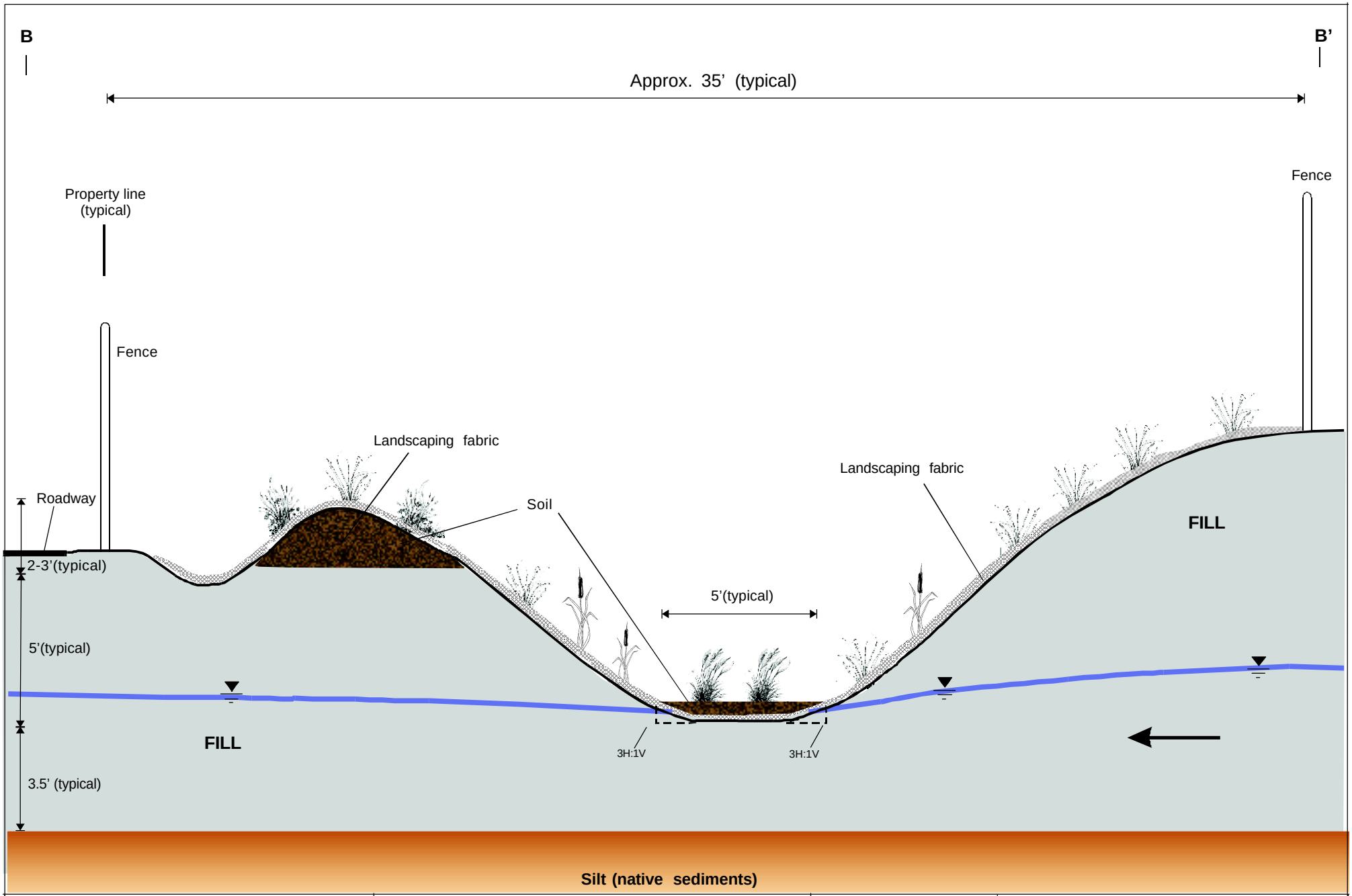
FIGURE 4

MAY 2003

Legend

Water Table (approximate)

Groundwater Flow



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BIOSWALE CONCEPTUAL DESIGN (SECTION B-B')

RODERICK TIMBER SITE
ABERDEEN, WA

FIGURE 5

MAY 2003

Legend

Water Table (approximate)

Groundwater Flow